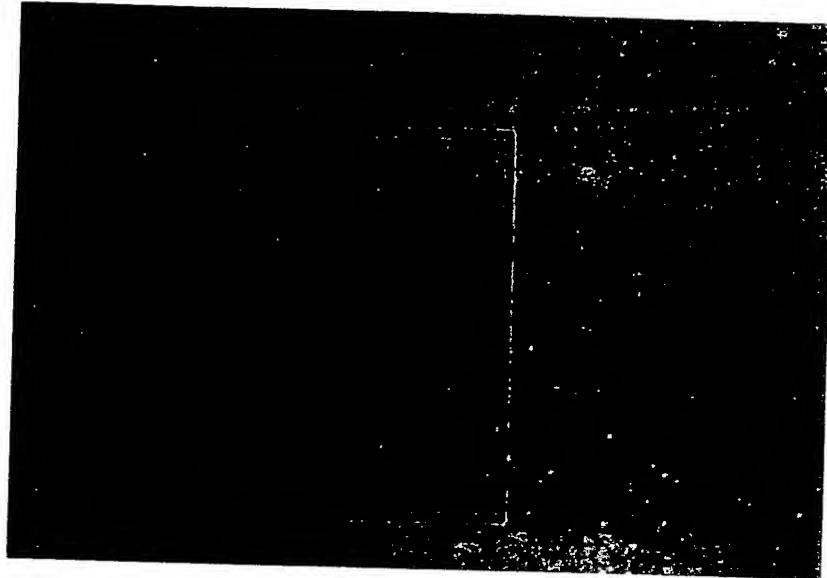


Figure 1



Before treatment (day 0)



After treatment (day 2)

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Figure 2A

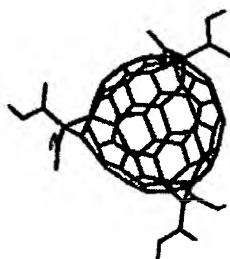


Figure 2B

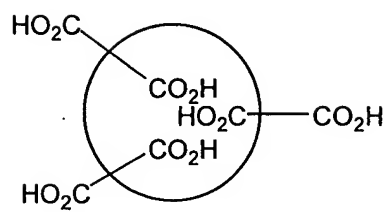


Figure 3

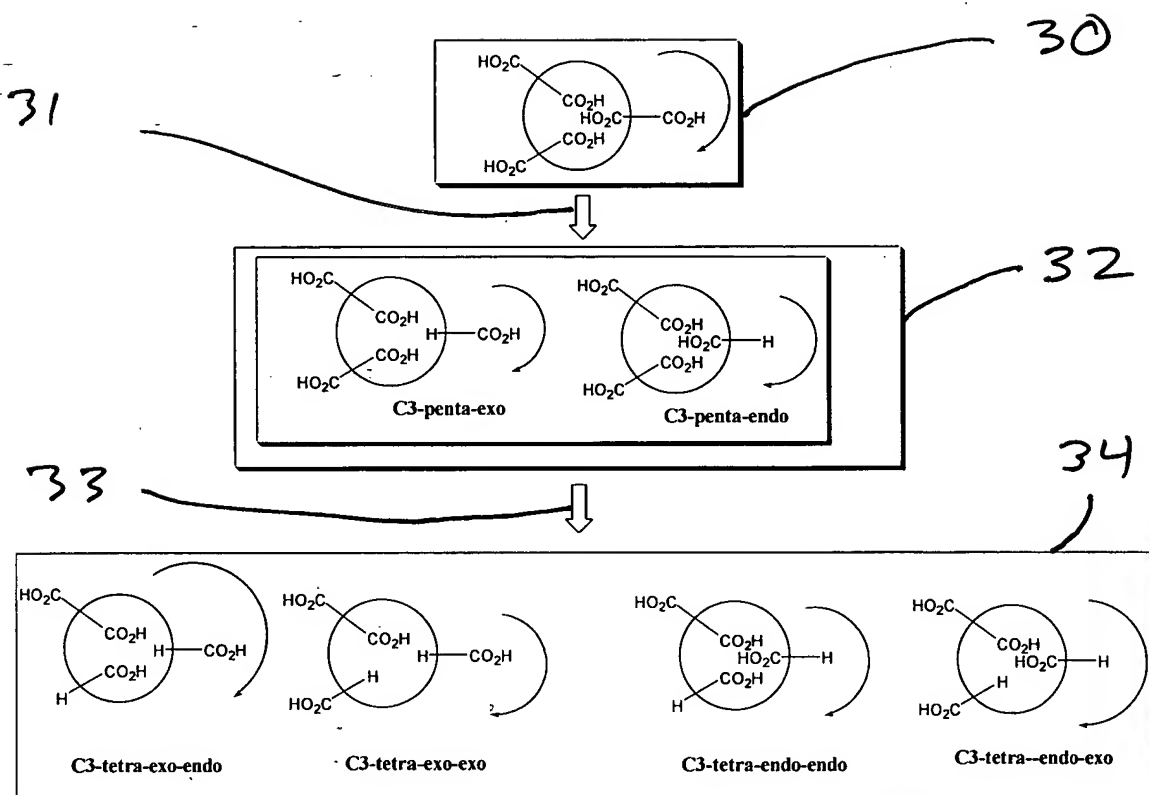


Figure 4

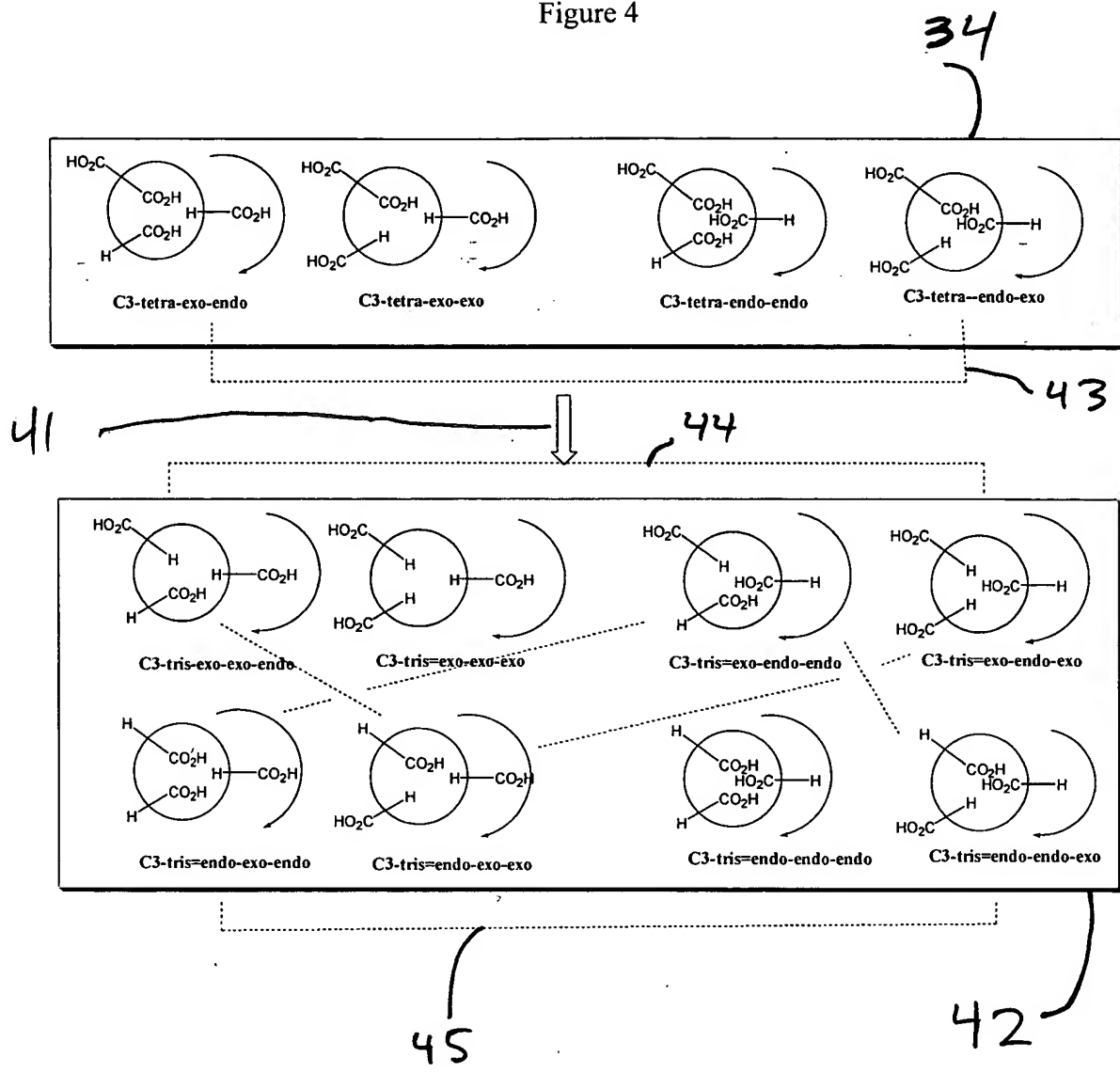
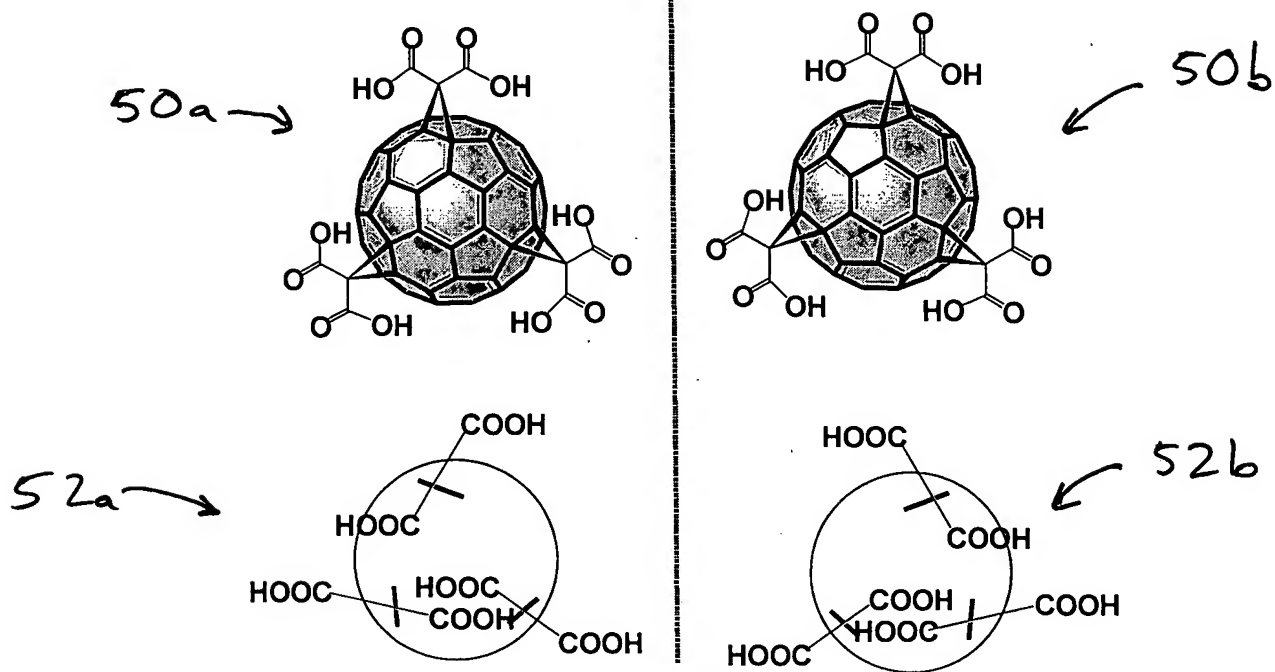


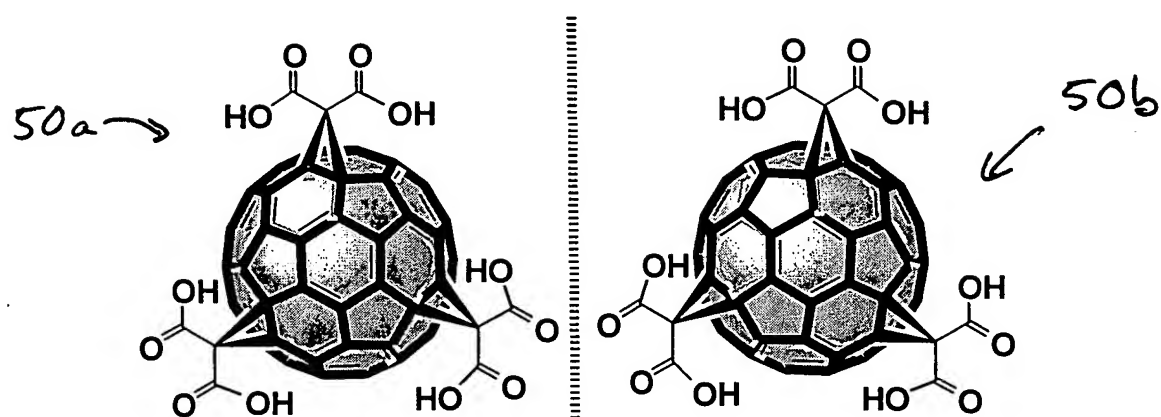
Figure 5

C3 is Chiral - two mirror images



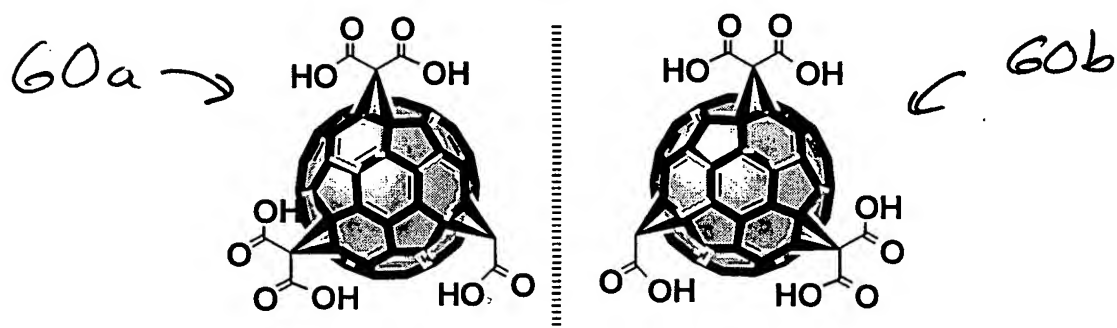
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Figure 6

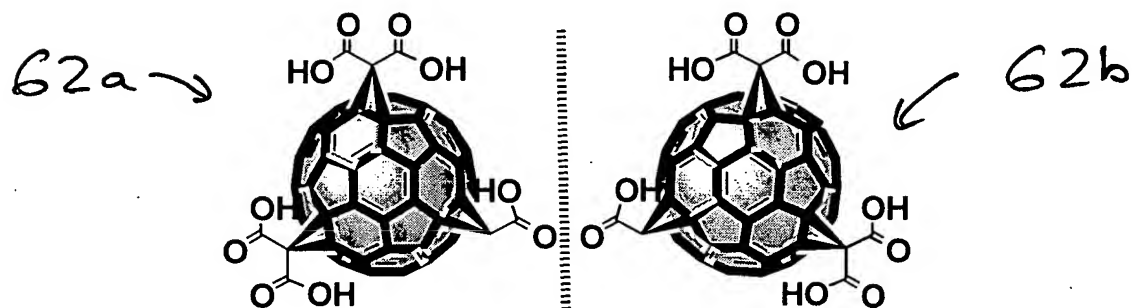


C3 mirror images

loss of one CO₂ group



C3-penta-exo



C3-penta-endo

Figure 7

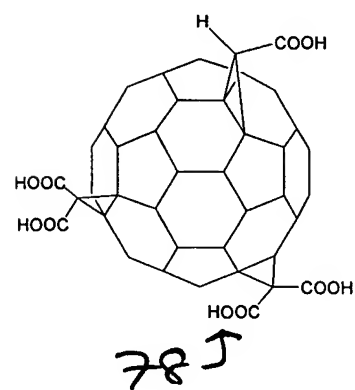
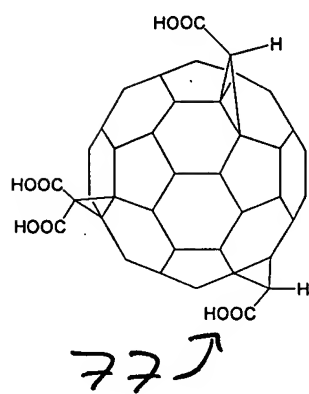
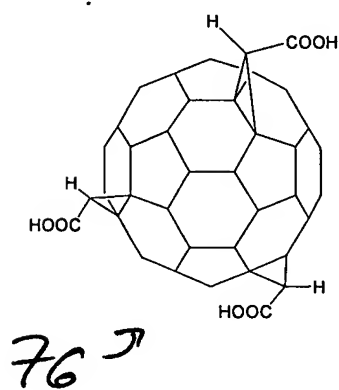
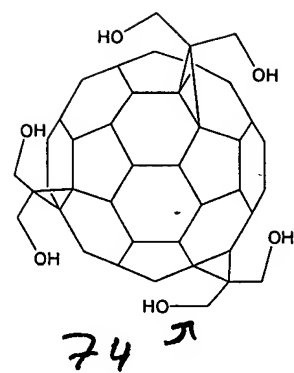
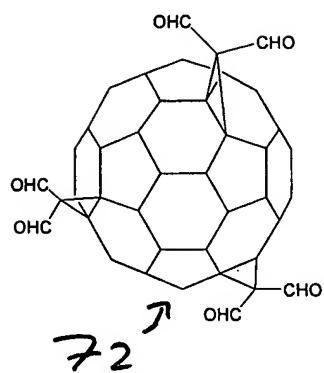
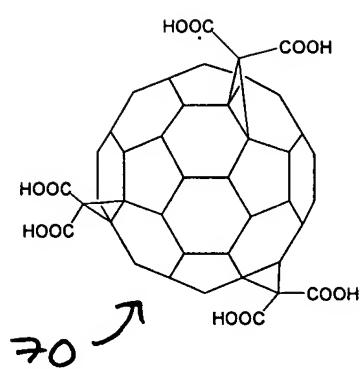


Figure 8A

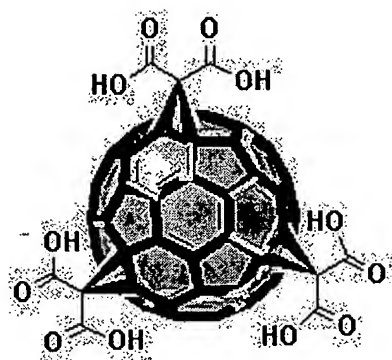
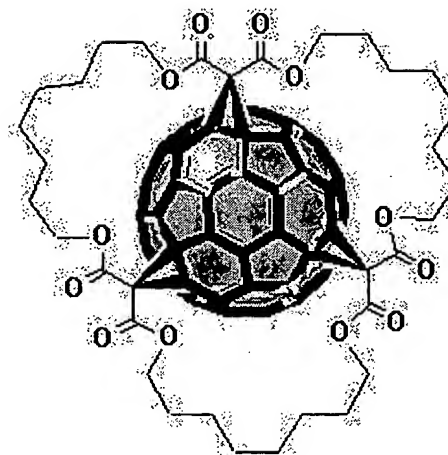


Figure 8B



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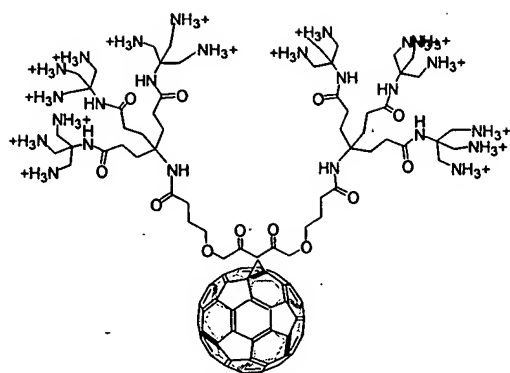


Figure 9A

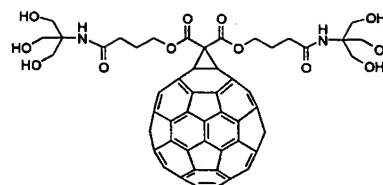


Figure 9B

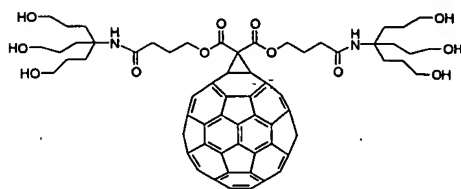


Figure 9C

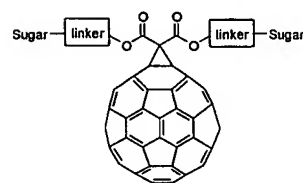


Figure 9D

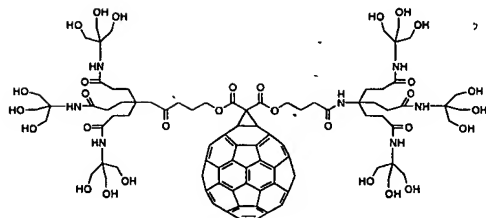


Figure 9E

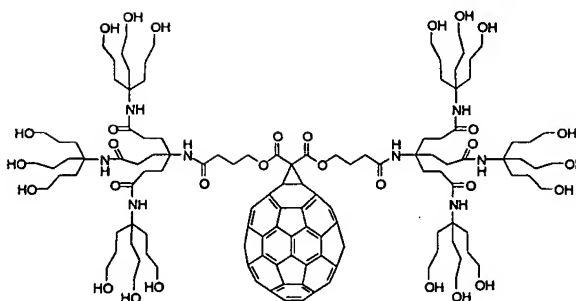


Figure 9F

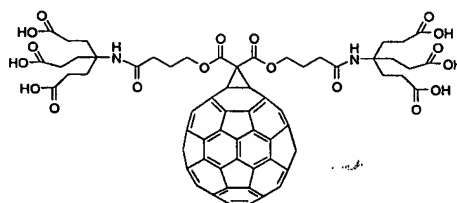


Figure 9G

Figure 10

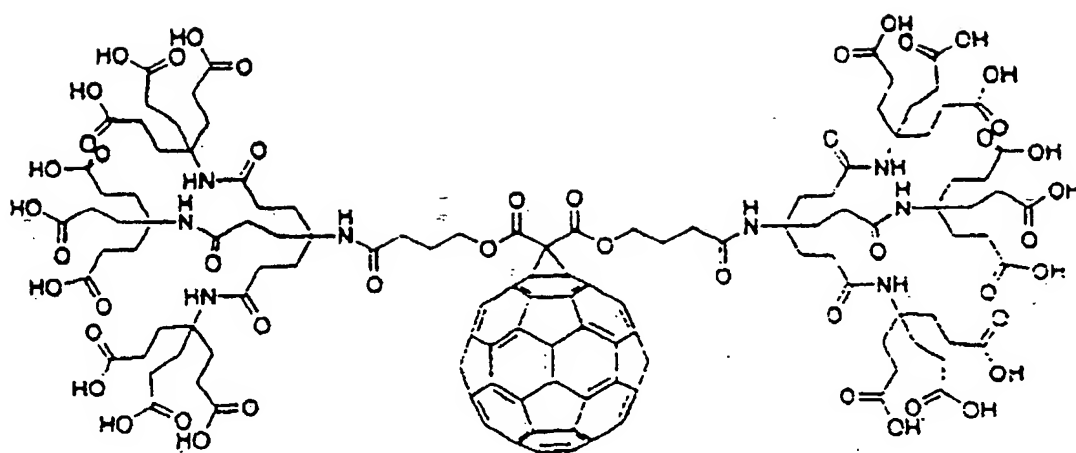


Figure 11A

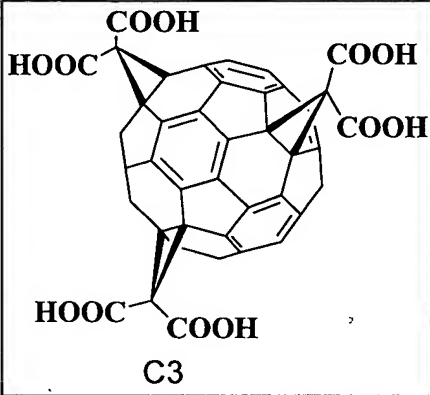
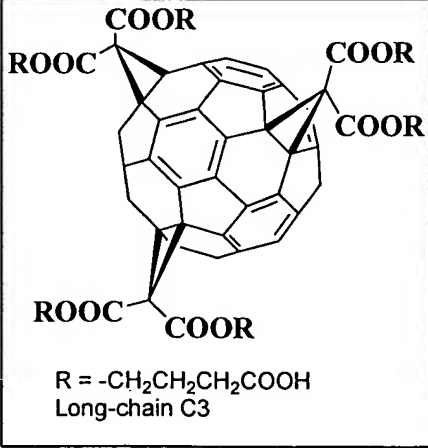
Compound	Ref. No.	IC ₅₀ (μM)
Trolox (Comparative)	110	440
<div><p>C3</p></div> <p>(Comparative)</p>	111	174
<div><p>R = -CH₂CH₂CH₂COOH Long-chain C3</p></div>	1201	42

Figure 11B

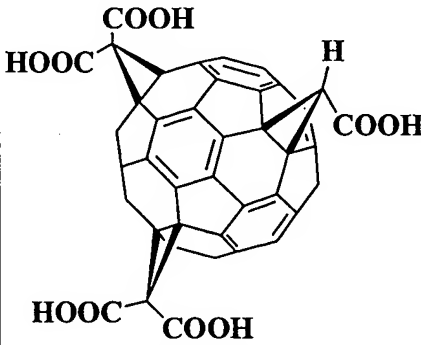
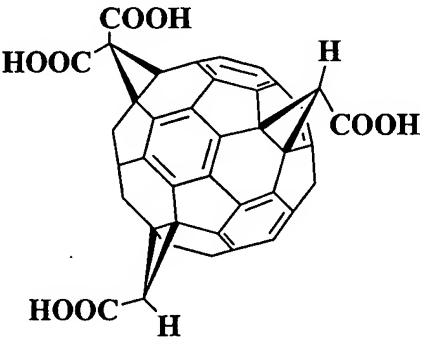
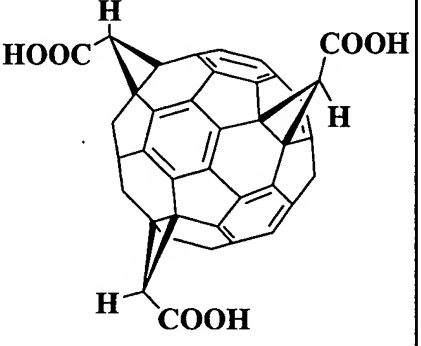
 <p>C3 penta acid</p>	1202	62
 <p>C3 tetra acid</p>	1203	48
 <p>C3 tris acid</p>	1204	44

Figure 11C

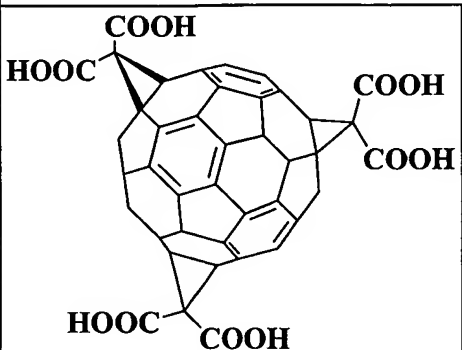
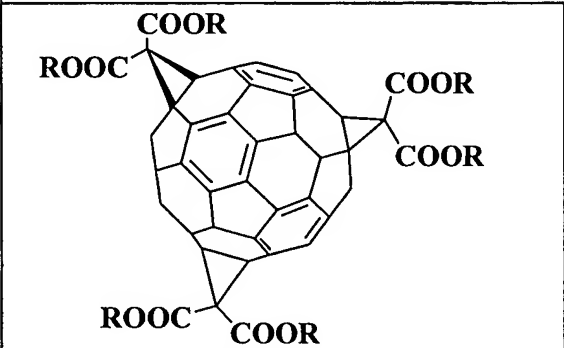
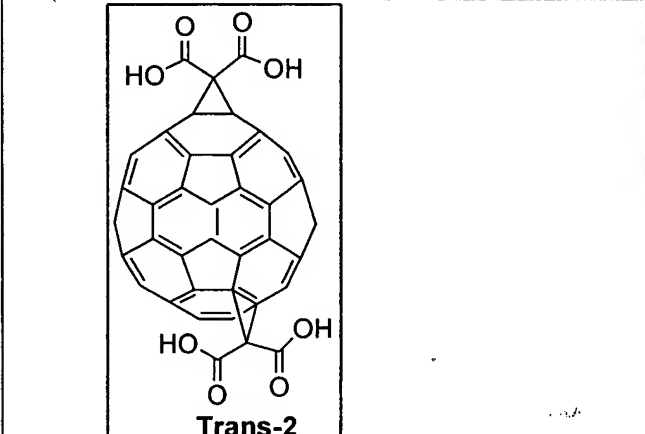
 <p>D3: R = H</p>	<p>112</p>	<p>965</p>
<p>(Comparative)</p>		
 <p>long-chain D3: R = CH₂CH₂CH₂COOH</p>	<p>1205</p>	<p>264</p>
 <p>Trans-2</p>	<p>1206</p>	<p>90</p>

Figure 11D

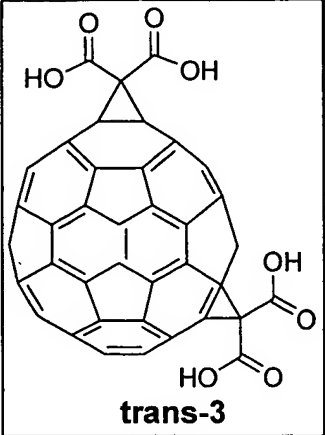
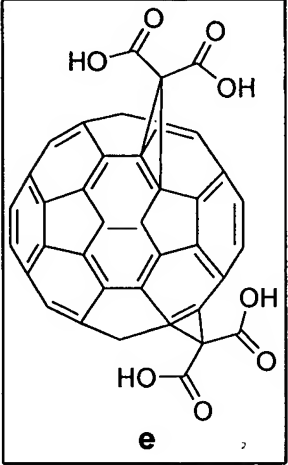
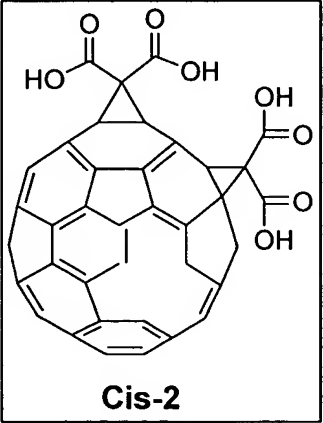
 <p>trans-3</p>	<p>1207</p>	<p>55</p>
 <p>e</p>	<p>1208</p>	<p>32</p>
 <p>Cis-2</p>	<p>1209</p>	<p>23</p>

Figure 11E

<div> <p>C70 bis: R = H</p> </div>	<p>1210</p>	<p>22</p>
<div> <p>long-chain C70 bis: R = <chem>CCCCC(=O)O</chem></p> </div>	<p>1211</p>	<p>11</p>
<div> <p>DF-1</p> <p>(Comparative)</p> </div>	<p>113</p>	<p>102</p>

Figure 11F

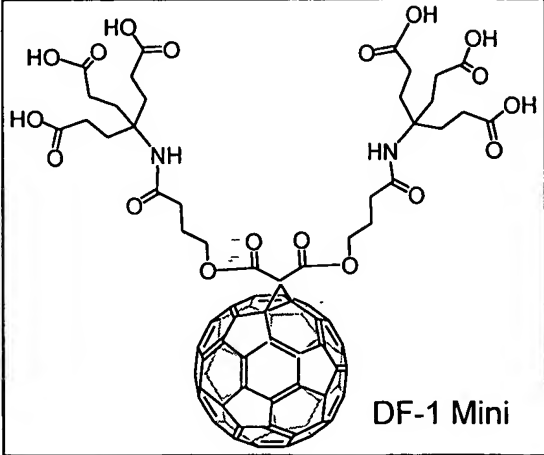
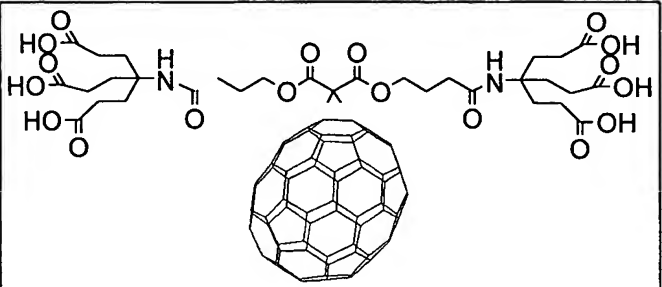
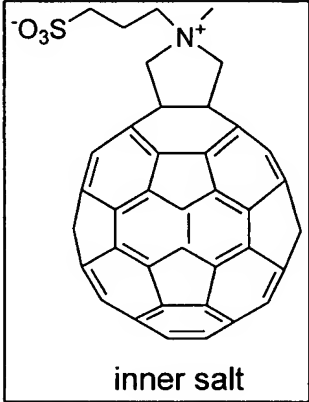
 <p>DF-1 Mini</p>	<p>1212</p>	<p>12</p>
 <p>C70 DF1 Mini</p>	<p>1213</p>	<p>6</p>
 <p>inner salt</p>	<p>1214</p>	<p>92</p>

Figure 11G

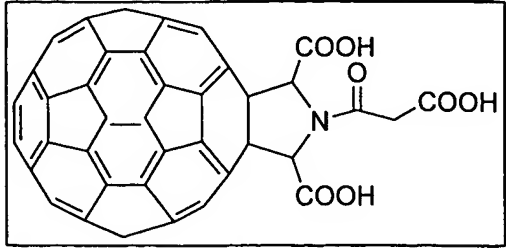
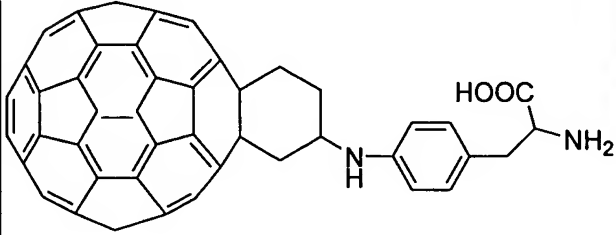
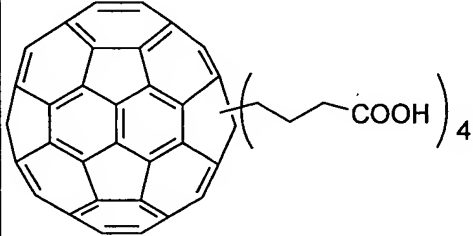
	<p>1215</p>	<p>17</p>
<p><u>Ho@C3</u></p>	<p>1216</p>	<p>38</p>
<p>$C_{60}(OH)_{12}$ (Comparative)</p>	<p>114</p>	<p>189</p>

Figure 11H

 <p>amino acid</p>	1217	56
 <p>poly acid</p>	1218	43